HANNAH SOLAR

Be A Solar Powerhouse.

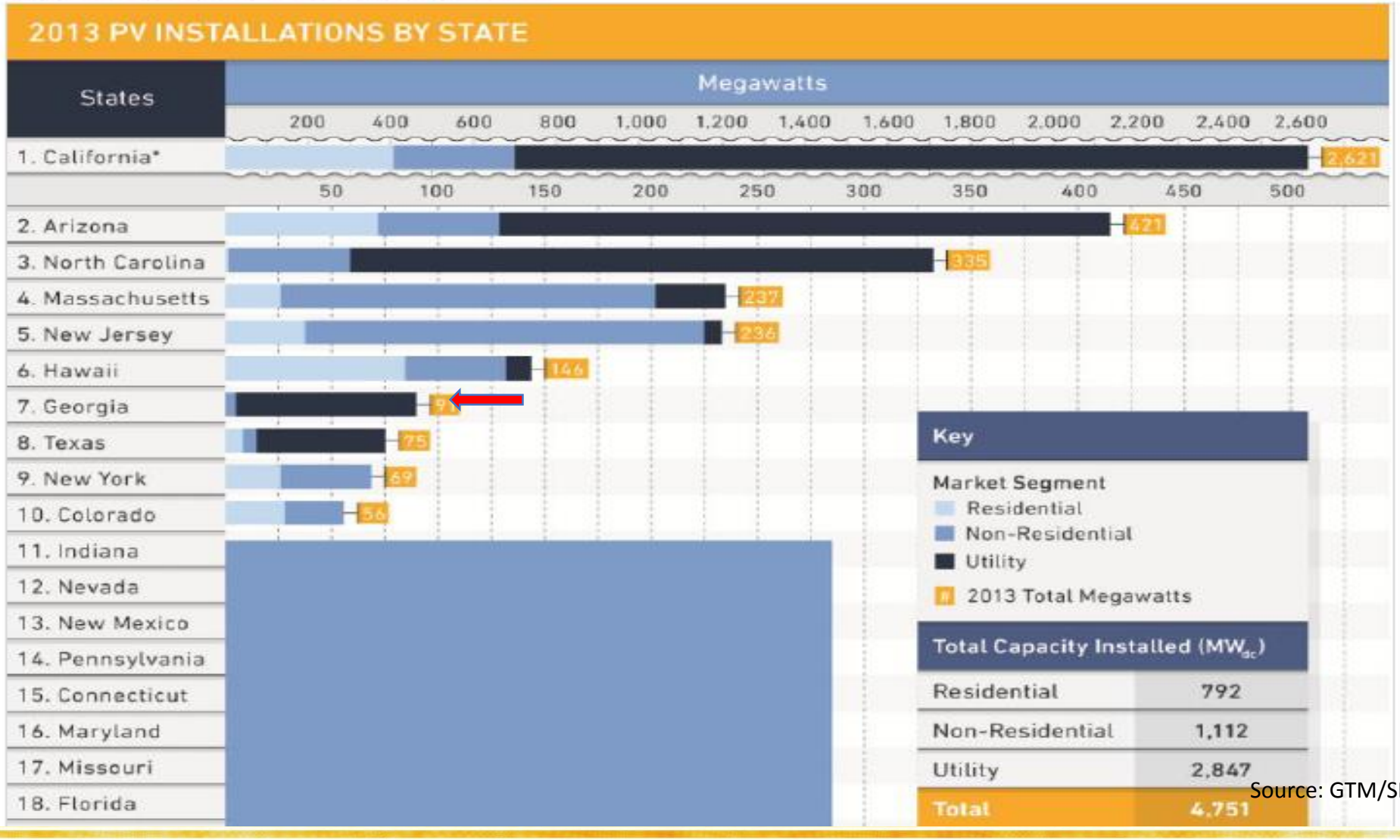
FEPS

Georgia Tech 2015

Southeast PV Overview

Top US States in 2013

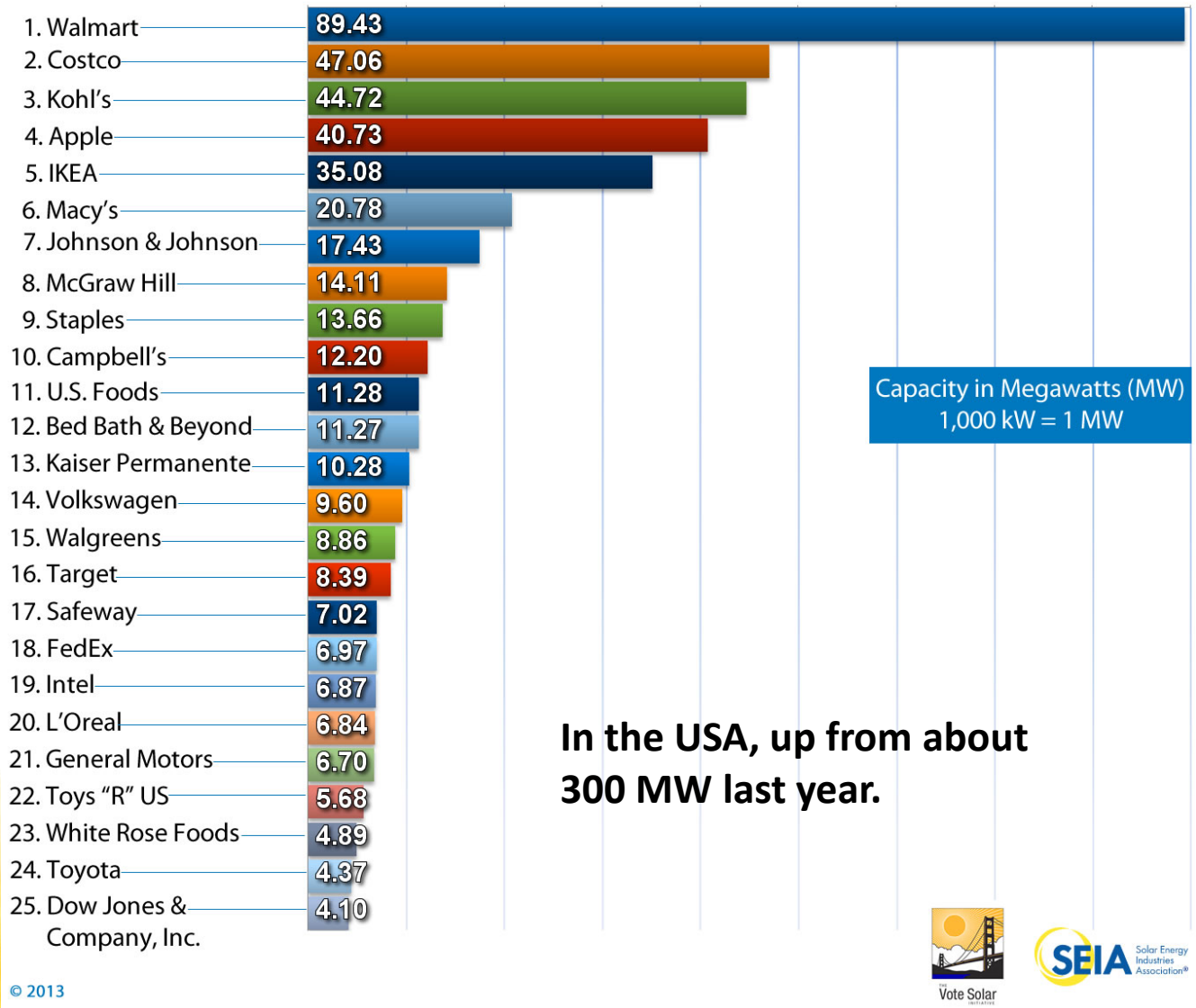
Figure 2.6 State PV Installation Rankings, 2013



Source: GTM/SEIA

HANNAH SOLAR
Leaders in Sustainable Energy

Top 25 installed more than 445 MW of Solar PV



In the USA, up from about 300 MW last year.

Vote Solar

SEIA Solar Energy Industries Association®

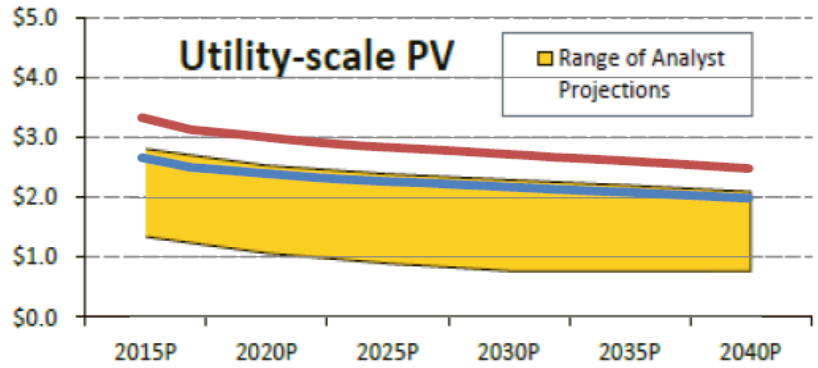
2013 Stats

Other Notable Industrials:

- Anheuser Busch
- Boeing
- Coca-Cola
- Del-Monte Foods
- Google
- Mars
- Merck
- Pepsi

The 'New' Cost of Solar

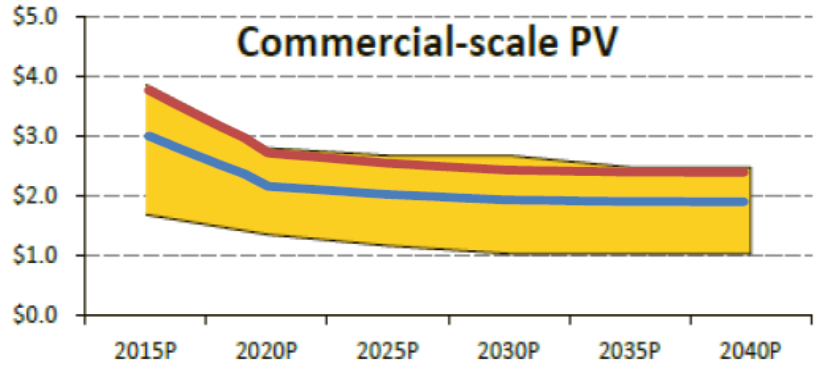
PV Installed Cost (2010 $/W)



Reference case

Low-Cost Renewables Case

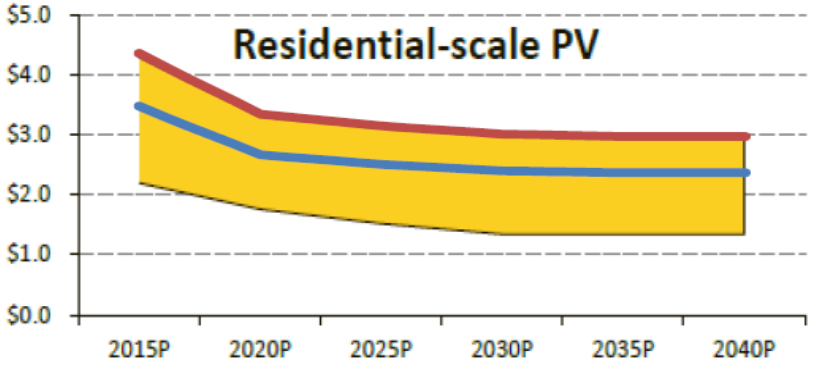
GT-NEMS' Utility-scale PV costs in both cases appear a bit high compared to long-range projections.



Reference Case

Low-Cost Renewables Case

Compared to long-range projections, GT-NEMS' costs of solar PV for commercial and residential in the low-cost side case appear appropriate.



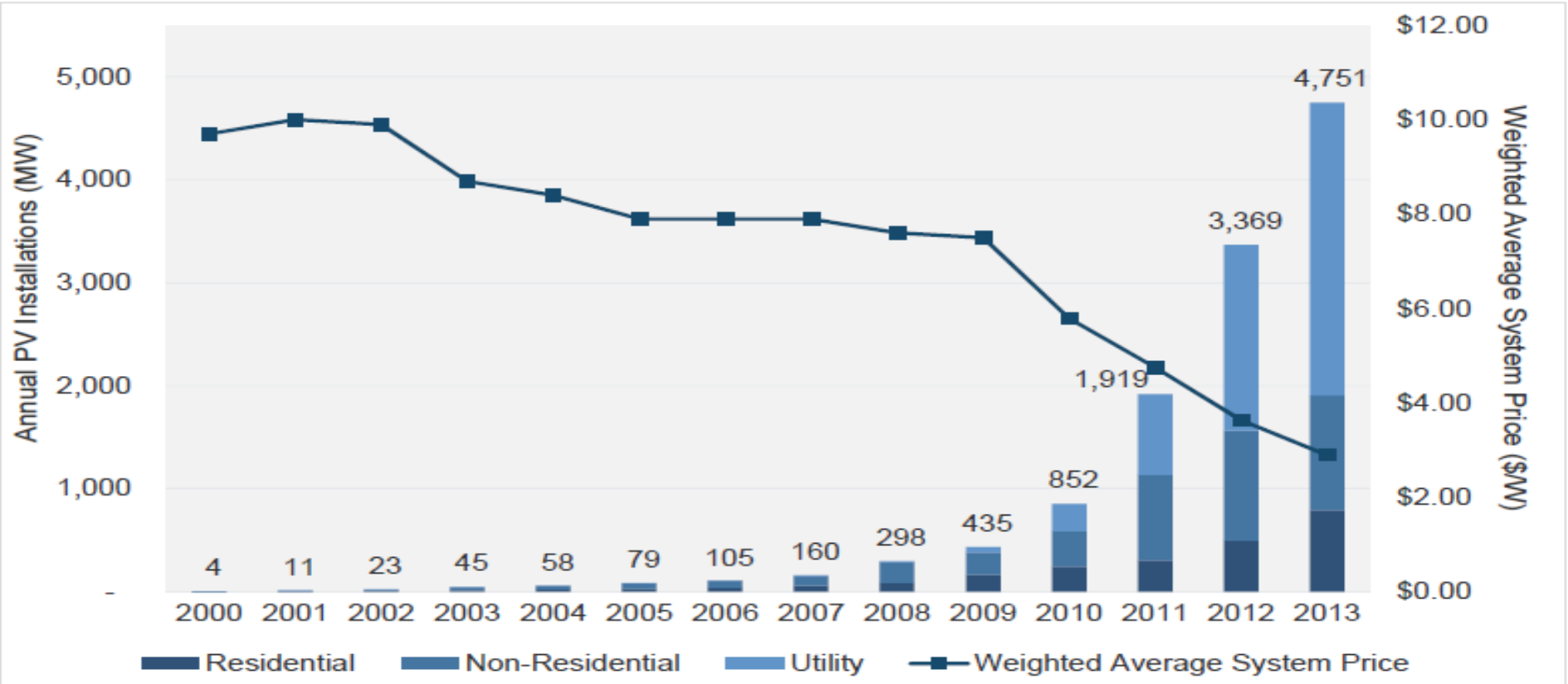
Reference Case

Low-Cost Renewables Case

Source:
Future of Power in the South (FEPS)
By Dr. Marilyn Brown, GA Tech

Another Record Year in US and Lower Costs

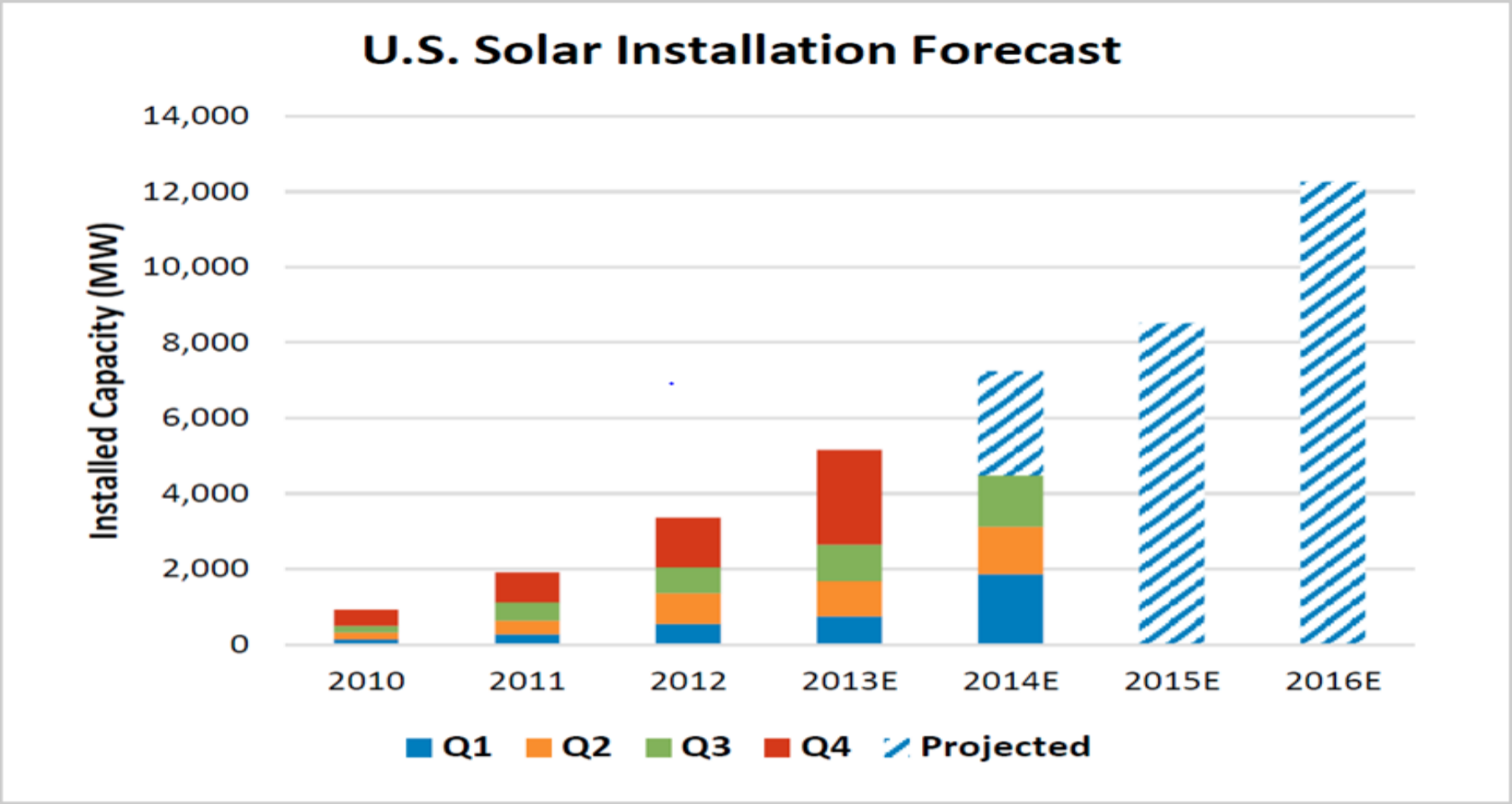
Figure 2.1 U.S. PV Installations and Average System Price, 2000-2013



Installations (MW)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Residential	1	5	11	15	24	27	38	58	82	164	246	304	494	792
Non-Residential	2	3	9	27	32	51	67	93	200	213	339	831	1,072	1,112
Utility	0	3	2	3	2	1	0	9	16	58	267	784	1,803	2,847
Total Installations	4	11	23	45	58	79	105	160	298	435	852	1,919	3,369	4,751

Source: GTM/SEIA

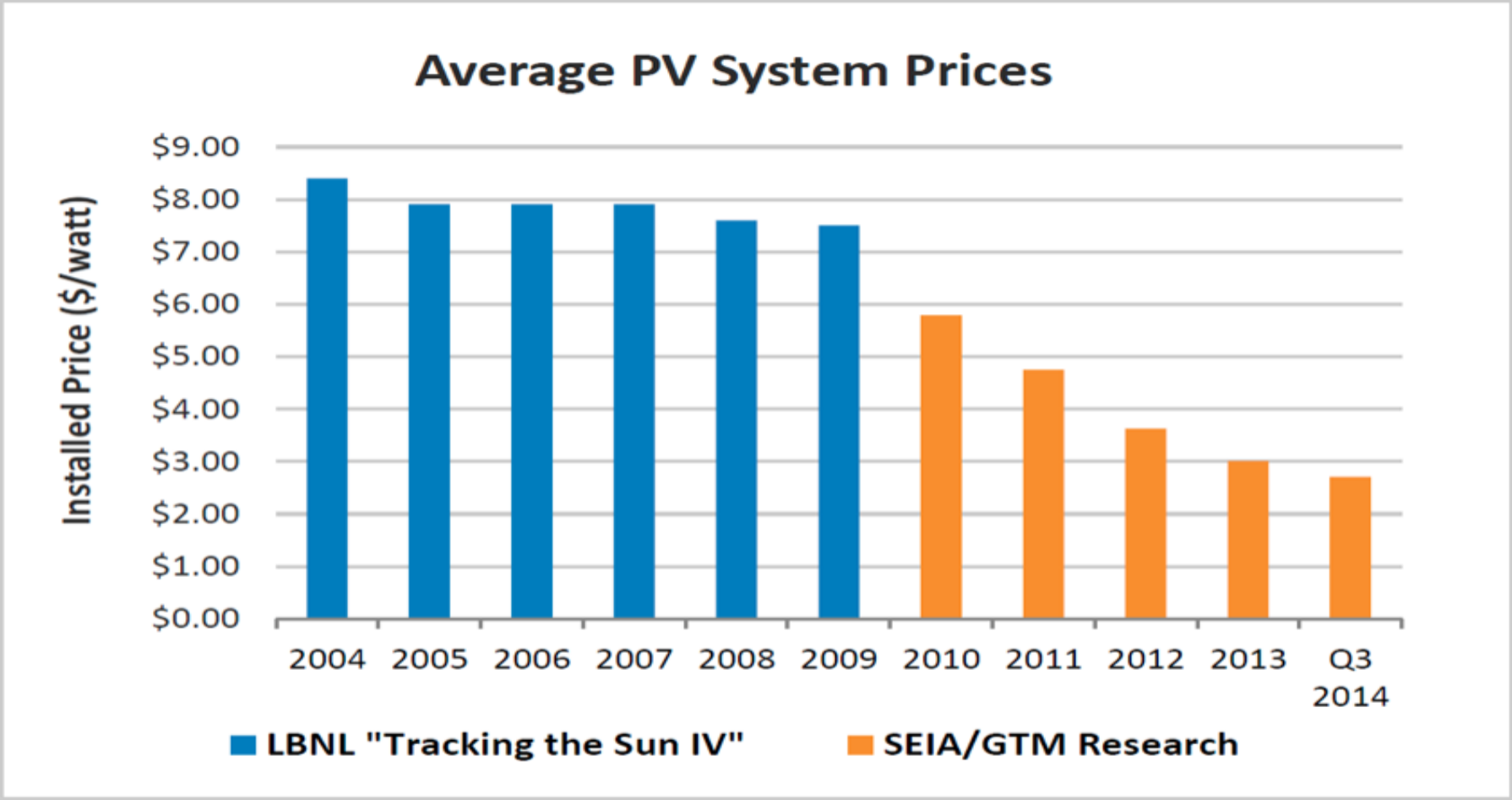
Solar Growth



GTM RESEARCH

40 YEARS SEIA Solar Energy Industries Association

Installed PV Cost Reduction



GTM RESEARCH

40 YEARS SEIA Solar Energy Industries Association®

The Future Is Today

& The Landscape has Changed!

Residential

Solarize Programs

Community Solar

Utility Scale Solar

Commercial & Industrial

The Future Is Today

Storage & EV -

Cost of Storage?
Value of Storage?
Compensation for Storage?

Economics & Sustainability

Two key metrics driving the adoption of Solar & Electric Vehicles

Brinson Farms, 100KW Solar Array – Irrigation Pivot Offset, Brinson, GA

White Oak Pastures, 50KW Solar Barn, Bluffton, GA

PV4EV

Features

Solar PV canopy over cars

An attractive structure

EV charging stations

Advertising media

Financing

Marketing assistance

Benefits

Property differentiation, PR

Brand exposure for an advertiser

Advertising revenue

EV drivers will seek & frequent

Association with clean energy

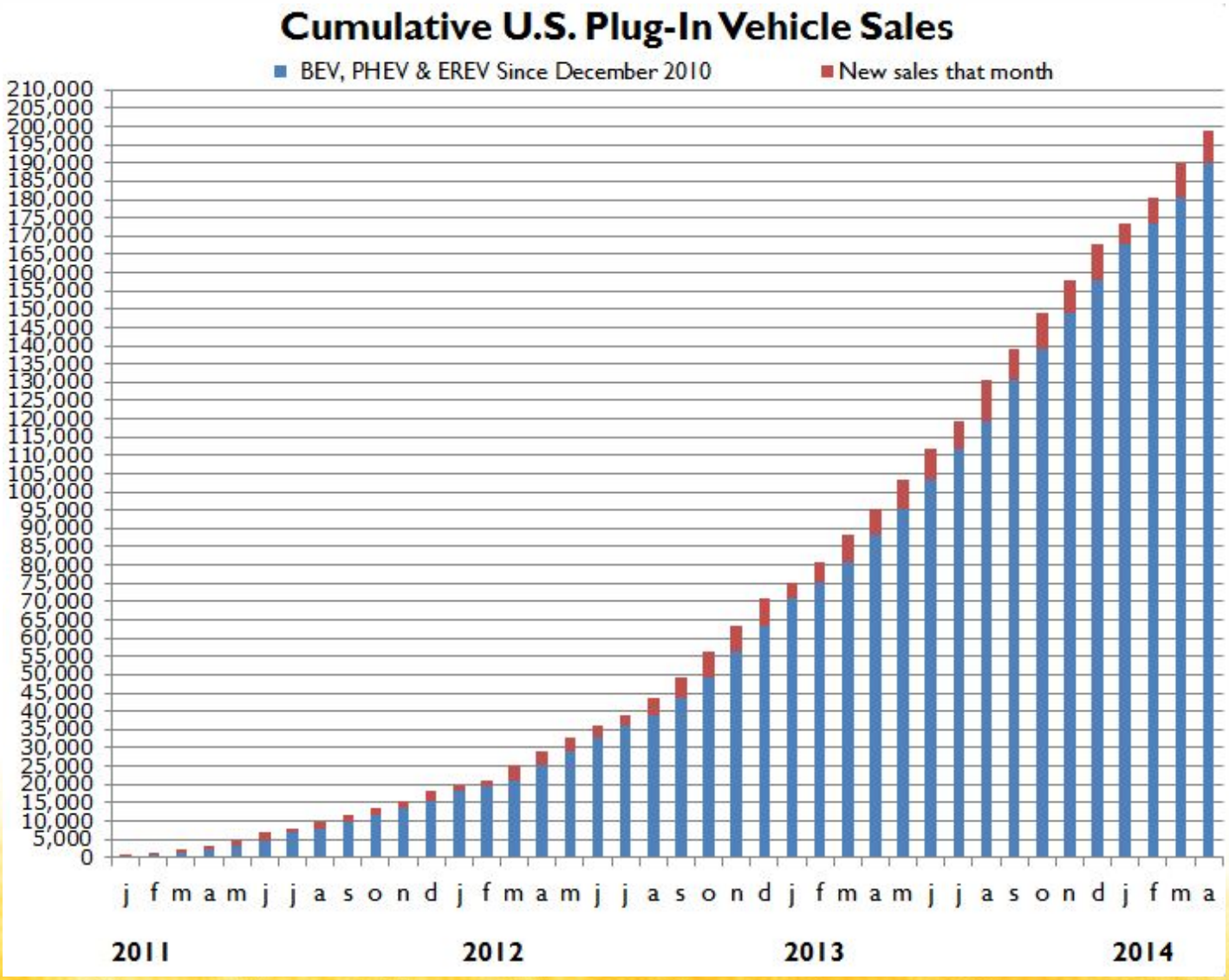
Solar revenue & ROI

Shade and rain cover

PV Parking Canopy Market Growth

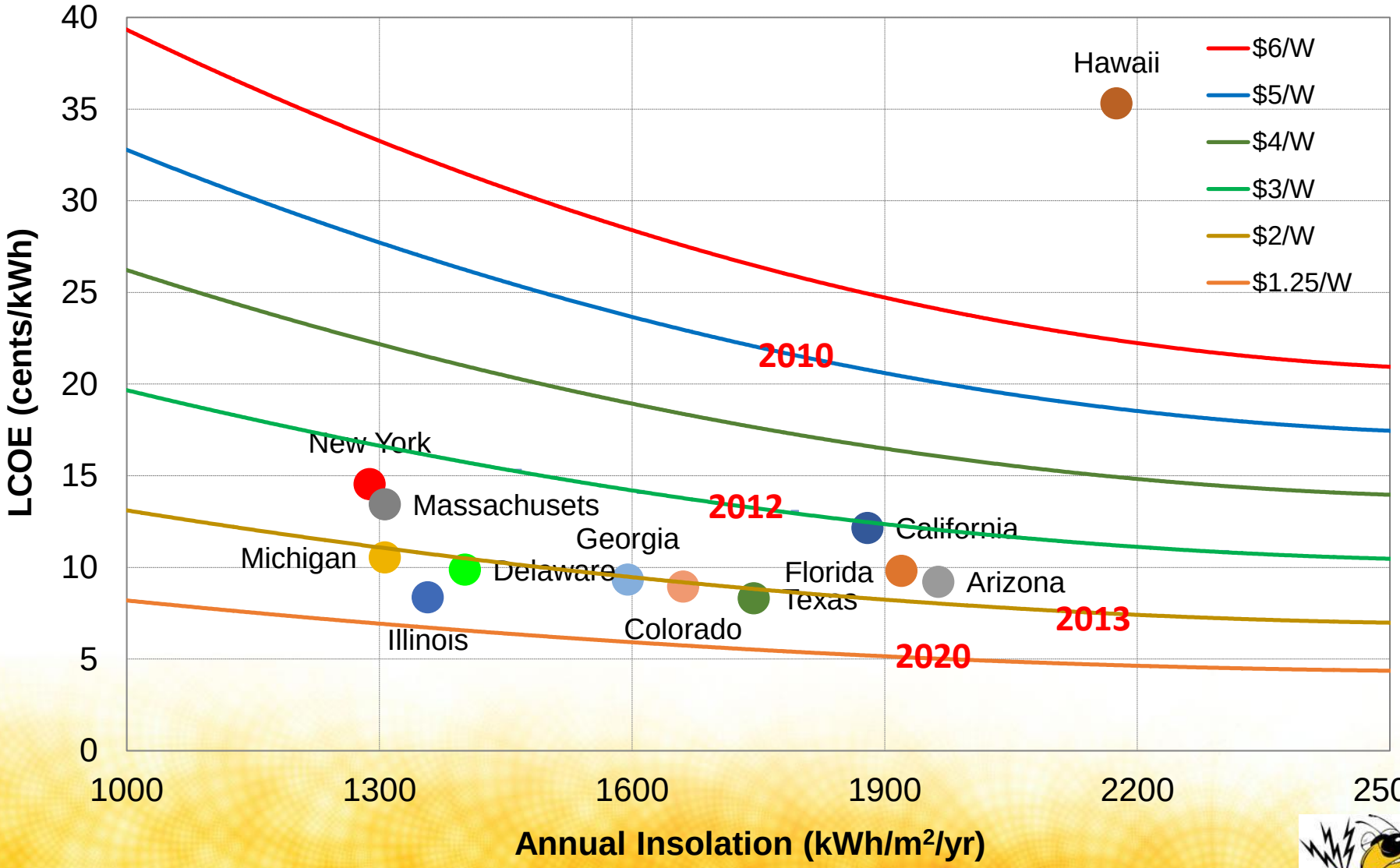
- *The solar carport market has become an increasingly substantial sector, growing to 157 MW in 2013.*
- *2014 is expected to be the fourth consecutive year during which greater than 100 MW of solar carport installations were installed.*
- *Historically seen as a niche market, exploited state-level incentives to grow the market at a CAGR of 45% from 2010 to 2014.*

GTM Report Sept'14.



HANNAI
Leaders in Sustain

LCOE as a Function of System Cost and Solar Insolation



Delivered cost per kilowatt hour (kWh)

With *no* incentives

2007

$8 /Watt Installed

100KW = $800,000
Generates 160,000 kWh/year
30 Year Generation = 4.8m
Cost Per kWh = $.19/kWh *

2009

$6.25 /Watt Installed

100KW = $625,000
Generates 160,000 kWh/year
30 Year Generation = 4.8m
Cost Per kWh = $.15/kWh *

2012

$3.00 /Watt Installed

100KW = $300,000
Generates 160,000 kWh/year
30 Year Generation = 4.8m
Cost Per kWh = $.08/kWh *

* Assumes 30 years of operation & maintenance and capital at 6%.

Delivered cost per kilowatt hour (kWh)

2014 Actual With incentives

2014

$2.54 /Watt Installed

100KW = $254,416

Generates 144,000 kWh/year

30 Year Generation = 4.32mW

Cost Per kWh = $.05/kWh *

$254,416 Project Cost

-$241,695 (Tax Credit)

= $12,721

= .001 per kWh FIXED 30 Yrs.

* Assumes 30 years of operation & maintenance and capital at 6%.

Solar Canopy Solutions

Camp Lejeune Marine Base

Size:742 kw

Location: Camp Lejeune
US Marine Base, New River, NC

Client: Dept. of Defense
Installation Time: 2 months
Project Date: April, 2014
Modules: Suniva
Mounting: Solaire Canopy

Solar Overview Presentation

Thank You

2014

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